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EXAMINER

VOLPER, THOMAS E

ART UNIT PAPER NUMBER

2665

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/522,608

Applicant(s)

NOZAWA, YOSHIAKI

Examiner

Thomas Volper

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 28 May 2003 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. Contrary to Applicant's statement in the remarks filed 29 July 2004, the Examiner has still not been provided with a concise explanation of JP 6-90236 and JP 9-8838. The Examiner has considered the Japanese Office Action dated April 24, 2002 and 1994 Electronic Information Communication Association reference, and has provided the signed and initialed PTO-1449 form for these references.

Response to Arguments

2. Applicant's arguments filed 29 July 2004 have been fully considered but they are not persuasive.

3. In response to Applicant's argument that the Examiner's alleged motivation for combining the cited references is unreasonable and the specific teachings in the Jones reference teach away from the stated motivation, the Examiner respectfully disagrees. The Examiner has applied the Jones reference in the rejection of claim 1 to provide a reason for implementing the statistical multiplexer of Zhang in a network according Duault. Duault has provided only ATM

Art Unit: 2665

switches at the interface of public and private ATM networks. Jones discloses a benefit for statistically multiplexing multiple subscribers onto a transport network, an improvement over simply switching subscribers onto the public ATM network of Duault. Zhang provides a statistical multiplexer for performing the beneficial statistical multiplexing suggested by Jones. The addition of extra equipment to the system resulting from a combination of Zhang and Duault is irrelevant, and independent from the economic benefit promoted in Jones (col. 6, line 61 – col. 7, line 4) and used as the motivation in this combination. As stated in the previous rejection, Jones discloses the features of ABR, VBR and CBR, well known in the art as ATM features. Although Applicant states that these features can be used with DSL, as disclosed in Jones, it is obvious to provide the beneficial statistical multiplexing of ABR, VBR and CBR connections in the ATM network of Duault by using a statistical multiplexer of Zhang.

4. In response to Applicant's arguments regarding claims 2-7, 9-14 and 16-24 that Grossglauser does not make up for the deficiencies of the combination of Zhang in view of Duault and Jones, the Examiner respectfully disagrees. As argued above, a combination of Zhang, Duault and Jones does in fact meet the claim limitations for which they are applied.

5. In response to Applicant's arguments regarding claims 8 and 15 that the Applicant's Admitted Prior Art (AAPA) does not make up for the deficiencies of the combination of Zhang in view of Duault and Jones, the Examiner respectfully disagrees. As argued above, a combination of Zhang, Duault and Jones does in fact meet the claim limitations for which they are applied.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (US 6,181,711) in view of Duault et al. (US 6,108,336) and Jones et al. (US 6,307,836).

Regarding claim 1, Zhang discloses a statistical multiplexer (808), which comprises the multiplex gateway device of the present invention, that receives compressed video input streams from several sources and combines these input streams into a single bit stream as its output on channel (810) (col. 14, line 57 – col. 15, line 3; see also Fig. 8). Zhang also discloses, in Fig. 11, an integrated bit rate conversion device and ATM cell converter (1100) that is coupled to an ATM network (1106) (col. 17, lines 56-62). Furthermore, a rate conversion scheme is used to accommodate the differences in bit rate between the MPEG-2 transport stream and the available connection capacity on the ATM network when a constant bit rate (CBR) connection is to be established (col. 18, lines 21-34). Zhang does not expressly disclose that the statistical multiplexer connects to an ATM network, nor does Zhang disclose that there are two statistical multiplexers, each connecting a different local area ATM network to a public ATM network. Duault et al. discloses an architecture in which two customer premises ATM networks, each with a number of ATM endpoints, connect to a public ATM network (Fig. 1). As seen in Fig. 1, two private ATM switches provide the respective connections for each of the customer premises ATM networks. Jones discloses that a statistical multiplexer (116, Fig. 1) supports

Art Unit: 2665

coalescing data signals from multiple subscribers for delivery of a collective packetized signal to the transport network. The reason for doing so being that consolidating access to multiple service types over one connection results in economic savings to the consumer and the carrier (col. 6, line 61 – col. 7, line 4). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the statistical multiplexer of Zhang in place of the private ATM switches in the invention of Duault to statistically multiplex the outputs of the ATM endpoints in the customer premises networks onto the public ATM network. One would have been motivated to do so for economical benefits to both consumers, located at the customer premises networks, and to the carrier providing access to the public ATM network.

8. Claims 2-7, 9-14, 16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (US 6,181,711) in view of Duault et al. (US 6,108,336) and Jones et al. (US 6,307,836) as applied to claim 1 above, and further in view of Grossglauser et al. (US 5,604,731).

Regarding claims 2, 7, 13, 14 and 20, the system provided by Zhang et al. in view of Duault et al. and Jones et al. provides for the output of a statistical multiplexer to be of the constant bit rate (CBR) type. That system fails to expressly disclose a piece-wise constant bit rate that varies in a predetermined time interval. Grossglauser discloses a system and method for renegotiated bit rate service that can readily be applied to an existing CBR network architecture. This renegotiated constant bit rate (RCBR) invention allows for the implementation of an intelligent data traffic management systems that are responsive to the rate at which new calls or request for connections enter and leave the network and occurrences of data transmission peaks

(col. 3, lines 1-12). The RCBR function is performed with the use of a Network Renegotiation Controller (213). Since the RCBR system provides CBR traffic that changes its rate from time to time, the RCBR system meets the limitation of a piece-wise constant bit rate system. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the RCBR system of Grossglauser to monitor and renegotiate the rate of the CBR output of the system provided by Zhang et al. in view of Duault et al. and Jones et al. One of ordinary skill in the art would have been motivated to do this to adapt the transmission rate according to changing network conditions and to avoid exceeding the maximum bit rate of the transmission channel.

Regarding claim 3, as described above, the system provided by Zhang et al. in view of Duault et al. and Jones et al. includes two statistical multiplexers of Zhang as the gateway between customer premises networks and an ATM public network. Zhang does not expressly disclose that the statistical multiplexers work in reverse, i.e. as demultiplexers at a reception end of a transmission. However, in the system provided by Zhang et al. in view of Duault et al. and Jones et al. it is obvious that the statistical multiplexers would operate as statistical demultiplexers as well. The statistical multiplexers of Zhang would need to operate also as demultiplexers in order to receive data and resolve the video streams to their original forms.

Regarding claim 4, the system provided by Zhang et al. in view of Duault et al. and Jones et al. thus far includes using statistical information to multiplex ATM cells and transmitting the statistically multiplexed ATM cells to a public ATM network. That system does not expressly disclose using mean rate and peak rate of ATM cells as the statistical information. However, Zhang discloses that digital video encoders must assume a particular bit rate profile, whether it is constant bit rate (CBR) or a variable bit rate (VBR). The word "profile" refers to the fact that bit

Art Unit: 2665

rate may not be constant, but variable under certain constraints, such as peak bit rate, average bit rate, minimum bit rate, etc. (col. 9, lines 2-12). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the mean rate and peak rate of ATM cells carrying digital video information as the statistical information used in multiplexing the ATM cells of the system provided by Zhang et al. in view of Duault et al. and Jones et al. One of ordinary skill in the art would have been motivated to do this be able to multiplex VBR encoded digital video traffic and still maintain the CBR output of the multiplexer.

Regarding claims 5, 9-12, 16, 17, 21 and 22, Zhang discloses that the statistical multiplexing process involves performing a rate addition to determine a rate addition result (col. 14, line 47-65). The system provided by Zhang et al. in view of Duault et al. and Jones et al. fails to expressly disclose using a rate addition result for calculating a piece-wise constant bit rate. Grossglauser discloses renegotiating the transmission bit rate according to changes in the amount of available bandwidth in the network (col. 7, lines 5-27). This is performed with the use of a Network Renegotiation Controller (213). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the rate addition of Zhang to calculate a renegotiated constant bit rate for the output of the statistical multiplexer in the system of Zhang et al. in view of Duault et al. and Jones et al. One of ordinary skill in the art would have been motivated to do this in order to make sure the sum output of the statistical multiplexer did not exceed the allowed bandwidth of the network, and if it did, to change it accordingly.

Regarding claim 6, as described above, the system provided by Zhang et al. in view of Duault et al. and Jones et al. includes two statistical multiplexers of Zhang as the gateway between customer premises networks and an ATM public network. Zhang does not expressly

Art Unit: 2665

disclose that the statistical multiplexers work in reverse, i.e. as demultiplexers at a reception end of a transmission. However, in the system provided by Zhang et al. in view of Duault et al. and Jones et al. it is obvious that the statistical multiplexers would operate as statistical demultiplexers as well. The statistical multiplexers of Zhang would need to operate also as demultiplexers in order to receive data and resolve the video streams to their original forms.

Regarding claims 18, 19, 23 and 24, the system provided by Zhang et al. in view of Duault et al. and Jones et al. thus far includes using statistical information to multiplex ATM cells and transmitting the statistically multiplexed ATM cells to a public ATM network. Also, as mentioned above, it is obvious to combine the renegotiated constant bit rate feature of Grossglauser, which represents a piece-wise constant bit rate function, with the system of Zhang et al. in view of Duault et al. and Jones et al.

9. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. (US 6,181,711) in view of Duault et al. (US 6,108,336) and Jones et al. (US 6,307,836) as applied to claim 1 above, and further in view of Applicant's admitted prior art.

Regarding claims 8 and 15, the system provided by Zhang et al. in view of Duault et al. and Jones et al. fails to expressly disclose that the plurality of first and second terminal devices are ITU recommendation H.310 compliant. Applicant admits as prior art a system for sending information from H.310 terminals in a customer premises network over a public ATM network to other H.310 terminals in another customer premises network (Figure 1 of the present invention). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use H.310 compliant terminals in the system provided by Zhang et al.

Art Unit: 2665

in view of Duault et al. and Jones et al. One of ordinary skill in the art would have been motivated to do this to allow users of H.310 terminals to take advantages of the statistical multiplexing gains offered by the combination system.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is (571) 272-3151. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at (571) 272-3155. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Art Unit: 2665

Thomas E. Volper



October 28, 2004



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